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Rural Schools—Fewer Highly Trained Teachers and Special Programs, but Better Learning Environment

Rural schools are smaller than metro schools. Fewer rural than urban teachers have completed advanced degrees, and fewer rural students have access to advanced or remedial courses. The smaller size of rural schools may be an advantage in other ways, however, including smaller classes, more attention from teachers, and a less stressful learning environment.

In a survey article on education policy in countries that are members of the Organization for Economic Cooperation and Development (OECD), Sher described education in rural communities as a neglected "ugly duckling." Education research, particularly research on school reform, has focused primarily on urban schools (DeYoung). In part, this is a reflection of the population mix—most students are enrolled in urban or suburban schools. No doubt it also reflects public concern with the highly visible problems of American cities. The urban focus may also reflect the belief, common among school reformers of the early 20th century, that "best practice" in teaching and administration would emerge in consolidated and professionalized urban school systems, rather than in backward rural systems (Tyack).

More recently, attention has begun to turn back to rural schools. In part, this stems from concern with rural economic development and the role that education and training can play in preparing the work force for an era of rapid technology change. Some educational researchers have also argued that small rural schools can in fact provide lessons for urban school reform (Hobbs, 1989 and 1995). Indeed, the literature on school reform now often emphasizes the benefits of small school size, particularly for disadvantaged students (Goodlad, Friedkin and Necochea).

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Unfortunately, research on rural schools has been hampered by a relative lack of data. Only recently have data for nationally representative samples of rural teachers and schools become available. These new data bases, developed by the National Center for Education Statistics, now make possible more extensive and systematic comparison of rural and urban schools (Stern). We used the 1987-88 Schools and Staffing Survey (SASS) to investigate differences between rural and urban schools. (See Data and Methods, p. 15, for a description of the survey and the definition of rural and urban areas we use in this article.)

Consistent with earlier studies, we find that rural schools are indeed smaller and less specialized than their urban counterparts. They also appear to be at a disadvantage in recruiting the most highly qualified teachers. As a result, rural schools do not offer as rich a curriculum to their students.

This loss of curricular diversity is not, however, the whole story. In several respects, rural schools appear to offer a learning environment superior to that available in other communities, particularly large urban centers. Classes are smaller. Students have greater opportunities for interaction with their teachers, who in turn enjoy greater control and autonomy in the classroom and report fewer classroom problems than do their urban counterparts.

School Size and Program Offerings

In 1940, there were 117,108 public school districts in the United States. By 1960, the number fell to 40,520 and by 1990 it leveled off at 15,367 (National Center for

Education Statistics). Pressures for this massive consolidation arose from "above," for the most part from education professionals and administrators in State education departments who considered small districts and schools inadequate, inefficient, and unprofessional. Of course, education departments also found it easier to monitor and regulate a few consolidated districts than many localized ones.

While this sweeping consolidation largely eliminated the one-room schoolhouse, considerable differences between the sizes of rural and urban schools persist (table 1). The average rural school enrolls only half as many students as a central city school. This difference is most pronounced at the secondary level, where the average rural high school is roughly a third the size of the typical urban high school.

Rural school district consolidations were undertaken, at least in part, to provide better educational opportunities and a wider range of services for rural students. While there has doubtless been progress in this respect, students in rural high schools remain less likely to benefit from specialized programs and advanced courses (table 2).

We looked at both student enrollment in those courses and hours teachers spent teaching them. High school students in rural communities and small towns are less likely than their counterparts in metro areas to be enrolled in special programs for the gifted or offering remedial instruction. They are also less likely to be taking an advanced mathematics class (such as advanced algebra, analytical geometry, trigonometry, or calculus) or a science course beyond biology (such as physics or chemistry) than are suburban students, but as likely to be enrolled in these courses as students in the other geographic areas. Interestingly, the share of the student body in college preparatory courses is no smaller in rural schools than in metro schools. Only a very small fraction of rural students receive instruction in computer programming or other uses of computers, although this is also true of students in the other types of communities.

To investigate possible causes of lower rural enrollment in gifted and remedial programs, we used a regression procedure to control for other school characteristics that would influence the availability or demand for these courses. Our controls include the level of the school (elementary, middle, secondary, combined), and measures of the socioeconomic characteristics of the student body—the percentage of students eligible for free or reduced-price lunch and the percentages of students who are Black or Hispanic. The results suggest that, even after adjusting for these factors, rural schools offer fewer specialized programs compared with schools in urban areas. For example, rural schools have smaller shares of students in bilingual and English as a second language programs even after controlling for the percentage of Hispanic students, an indication that this population receives different services depending on where it goes to school.

Table 1

Schools and students by county type, 1987-88

Rural schools average less than half as many students as central city schools

		Metro			Nonmetro	
Item	Unit	Central city	Suburb	Small city	Small town	Rural
Schools	Thousands	13.5	10.6	22.9	15.1	10.5
Share of all schools	Percent	18.6	14.5	31.5	20.8	14.5
Students	Thousands	9,313	6,027	12,580	6,500	3,348
Share of all students	Percent	24.7	16.0	33.3	17.2	8.9
Students per school	Number	688.0	570.3	549.1	430.4	317.7
High schools	Thousands	2.1	1.7	3.7	2.9	2.3
Share of all high schools	Percent	16.4	13.5	29.3	22.8	18.0
High school students	Thousands	2,694	1,420	3,532	1,732	886
Share of all HS students	Percent	25.2	17.2	33.1	16.2	8.2
Students per high school	Number	1,297	1,073	949	598	389

Note: See Data and Methods, p. 15, for definitions of county types.
Source: Calculated by the authors using data from the 1987-88 Schools and Staffing Survey.

In sum, fewer rural students are enrolled in remedial or gifted programs and rural teachers average fewer hours of instruction. Availability of and teacher time devoted to advanced math, science, computer, and placement courses do not vary much across the geographic areas, except suburban areas lead all other areas in advanced math and science courses. Smaller rural schools may not have enough students to support running remedial and gifted programs, but they appear to offer some curricular diversity, most of which is geared toward college-bound students.

Rural Teachers Lag Urban in Educational Background and Pay

Earlier research has often emphasized the difficulty of recruiting teachers to rural areas, the quality of the rural teaching workforce, and looming "teacher shortages" (Darling-Hammond, Dunathan, Swift). Low salaries are frequently cited as a contributing factor (Horn).

Rural teachers average a year's less teaching experience than metro teachers (table 3). On the other hand, they average a year more experience at their current school, at least compared with central city teachers. This finding suggests that interschool mobility of rural teachers is lower. Both rural and urban schools, however, report quite high annual rates of teacher turnover, between 9 and 10 percent.

Table 2

Percentage of student hours spent in special and advanced courses

Rural students average less time in gifted and remedial programs than do students in any other area, but lead other areas' students in time spent in advanced placement courses

	Metro			Nonmetro	
Courses	Central city	Suburb	Small city	Small town	Rural
			Percent		
Advanced mathematics	2.4	3.3	2.7	2.1	2.5
Advanced science	2.5	3.3	2.7	2.8	2.6
Computer programming	.5	.6	.9	1.0	.7
Advanced placement	4.1	4.3	4.0	4.7	4.8
Gifted	5.3	4.8	4.3	4.0	2.7
Remedial	5.3	4.8	4.3	4.0	2.7

Notes: See Data and Methods, p. 15, for definition of county types. Hours devoted to these courses are calculated by summing the time per week each teacher spent teaching the subject multiplied by the number of students in the class. This is divided by a student-weighted sum of all teachers' classroom hours to obtain the percentages in the table.

Source: Calculated by authors using data from the Schools and Staffing Survey.

Does teacher turnover present greater difficulties for rural schools? Is there a "teacher shortage" in rural schools? SASS asked districts to indicate the number of advertised teaching positions which were left unfilled or which were filled by a substitute as of October 1. The highest incidence of such vacancies was in central city schools, where 0.8 percent of all teaching positions were still waiting to be filled by qualified permanent personnel. The incidence was lower in other areas and smallest in rural areas and small towns (0.47 and 0.45 percent, respectively). Their turnover rates were not lower because rural and small town districts canceled positions they could not fill—cancellations were only 0.33 percent of all positions in rural districts, the same percentage as in suburban systems.

These figures do not support the claim that rural schools are unable to recruit teachers. However, when teachers who lack appropriate certification credentials cannot be hired, State regulations usually allow for "temporary" or "emergency" certification. Thus, the incidence of unfilled positions may fail to reflect fully the problems faced by rural schools in recruiting instructors. But, again, the SASS shows that virtually all teachers hold standard certification in their principal field (table 3). Over 93 percent of teachers in all areas are certified.

While the evidence strongly suggests there is no absolute shortage of teachers, districts in metro areas appear to have a better applicant queue from which to select. Rural teachers are less likely to have graduate degrees or to have graduated from a "selective" college or university than their urban counterparts. While research has failed to establish a strong relationship between the level of a teacher's highest degree and effectiveness in the classroom, there is considerably stronger evidence that persons who attended better undergraduate institutions are more capable teachers (this literature is reviewed in Ballou and Podgursky). The fact that a rural teacher is only half as likely to have graduated from such a program suggests that rural districts are at a disadvantage in recruiting.

Concern about the low standards for admission to programs of teacher education, as well as a new emphasis on academic rigor in undergraduate education, has led a number of States to require that prospective teachers at the secondary school level major in the subject they are to teach. In this light, we compare the academic preparation of teachers by community. Rural secondary school teachers are less likely to have majored in an academic subject (as opposed to education) than are secondary school instructors in metro areas. In particular, central city and suburban teachers were a third again as likely to have majored in math or science, subjects where the shortage of adequately trained instructors is particularly severe.

The SASS also allows us to investigate whether lower pay is part of rural areas' problem in recruiting the most highly trained teachers. Two measures of teacher pay in rural and urban schools: average pay offered beginning teachers with a bachelor's degree and average salaries for teachers with a master's degree and 20 years experience, confirm lower rural salaries (table 4). Since virtually all school districts follow "single salary schedules" (that is, pay teachers at all levels and specialties according to a single schedule based on seniority and educational credentials), we do not disaggregate pay by school level.

Since differences in the cost of living among areas may affect salary levels, we also show an adjusted teacher pay deflated by a state-level metro-nonmetro cost of living index. The estimates are based on cost-of-living indexes prepared by the Center for the Study of Educational Finance at Illinois State University (McMahon and Chang) and are presented as a lower bounds of the salary differential. No data are available on the price and quantity of goods and services purchased in all local areas which would provide the information needed to construct a true cost of living index for all areas nationwide.

Table 3

Characteristics of full-time teachers, 1987-88

Fewer rural teachers have completed degrees in the academic subject they teach and fewer graduated from the most selective colleges

		Metro			Nonmetro	
Characteristic	Unit	Central city	Suburb	Small city	Small town	Rural
Full-time experience	Years	16.4	16.9	15.8	15.1	15.3
At current school	do.	8.9	9.7	8.9	9.4	9.7
Turnover rate[1]	Percent	10.4	9.5	9.7	9.1	9.7
Certified[2]	do.	93.5	97.1	96.6	96.7	96.8
MA	do.	51.7	53.5	45.4	41.1	36.8
Ed.D./Ph.D.	do.	1.3	.8	.6	.5	.4
BA in academic field[3]	do.	42.1	39.3	34.3	31.3	28.3
Math or science BA	do.	12.5	12.5	10.7	10.6	9.3
Graduate of selective college[4]	do.	24.5	26.9	19.1	15.3	12.1

[1]Turnover rate is number of teachers who left during the 1986-87 academic year divided by the number of teachers employed as of October 1987.
[2]Certified is holding standard State certification in the subject matter taught.
[3]Teacher received a bachelor's degree in the academic field they teach rather than or combined with a degree in education.
[4]Selective colleges are those defined as "most," "highly," or "very" competitive in Barron's Profile of American Colleges, 1995.
Note: See Data and Methods, p. 15, for definition of county types.
Source: Calculated by authors using data from Schools and Staffing Survey.

Table 4

Teacher salaries, 1987-88

The rural-urban salary gap is wider among more educated, more experienced teachers than among those just starting out; applying an estimated cost index lowers the gaps, but does not close them

	Metro			Nonmetro	
Item	Central city	Suburb	Small city	Small town	Rural
			Dollars		
Current salary:					
Starting out[1]	20,030	19,084	17,834	17,024	16,530
Experienced[2]	35,398	34,251	30,039	27,560	26,245
Salary after applying cost index					
Starting out[1]	17,836	16,960	16,596	16,943	16,530
Experienced[2]	31,566	30,577	28,022	27,464	26,245

Note: See Data and Methods, p. 15, for definition of county types.
[1] Bachelor's degree and no previous experience.
[2] Master's degree and at least 20 years teaching experience.
Source: Calculated by authors using data from the Schools and Staffing Survey and an estimated cost of living index from McMahon and Chang.

McMahon and Chang's estimated index is built from available data and should be viewed as a possible bound, not an exact measure of cost-of-living differences. While average pay for starting teachers is 21 percent higher for central city teachers than for rural teachers, applying the estimated cost index puts a lower bound on the difference of 8 percent. The gap is considerably wider for experienced teachers, 35 percent higher on average and still 20 percent higher after applying the estimated cost index.

Interpretation of these rural-urban pay gaps is complicated given the mix of amenities (and disamenities) in rural versus urban areas and the wide dispersion of individual preferences regarding these amenities. In a competitive labor market, workers make mobility decisions not just on the basis of pay, but on the basis of their perceptions of locational and job amenities as well. Thus, the fact that a science teacher in rural Montana earns $25,000 while a similar teacher in Chicago earns $40,000 does not mean that the former would prefer to swap jobs with the latter (or vice versa). When asked about the level of satisfaction with their pay, rural teachers were as satisfied as teachers in other locales, even more satisfied than suburban teachers.

To summarize, rural schools have not been able to staff their schools with teachers whose academic background and professional preparation equal those of central city and suburban instructors. This is particularly apparent when we look beyond formal teaching credentials to indicators of the quality of undergraduate education and subject-matter knowledge. While lower salaries may hamper rural recruitment, the rural disadvantage likely reflects other difficulties in recruiting teachers. For example, many teachers are in two-earner families requiring job opportunities for both themselves and their spouses. If rural communities do not have job opportunities for the spouses, they will have difficulty recruiting the teachers.

Rural High School Teachers Can Concentrate on Fewer Students

While rural schools may not offer the widest array of courses or attract the most highly trained teachers, there are offsetting advantages to attending a rural school. Particularly noteworthy are differences in student/teacher ratios (table 5). We report two measures. The first is the number of students at the high school divided by the number of teachers. Since this ratio can be heavily influenced by the presence of teachers with specialized assignments who deal with very small numbers of students, we present an alternative measure — the number of students taught on an average day by high school instructors of departmentalized subjects (for example, English or history). By both measures, rural high school students clearly benefit from a more favorable student/teacher ratio. Indeed, the typical high school teacher in a rural school has only three-fourths as many students as an instructor in a central city or suburban community.

Table 5
Ratio of students to high school teachers, 1987-88
Teachers in rural schools deal with fewer students than teachers in more urban schools do

	Metro			Nonmetro	
Students	Central city	Suburb	Small city	Small town	Rural
			Number		
Per teacher	21	18	19	17	16
Taught per average day by departmental teachers[1]	104	99	96	85	75

Note: See Data and Methods, p. 15, for definition of county types.
[1]Departmental refers to teachers of the generally required courses in English, history, math, science, and social studies.
Source: Calculated by authors using data from the Schools and Staffing Survey.

Rural School Environment Appears to Be Better

Along with lower student/teacher ratios, teacher assessments indicate that the rural school environment may be more conducive to learning. We find several striking differences between urban and rural teachers' assessments of school problems, opinions on school leadership and their own autonomy, and time spent in after-school activities involving students.

In table 6, we report the affect of community type on teachers' assessments of various problems at their schools. The teachers' responses were categorized as 1=serious problem, 2=moderate problem, 3=minor problem, and 4=not a problem, so the higher the score shown in the table the less of a problem the issue is perceived to be by the average teacher.

On almost every count, rural schools provide a more attractive learning environment than do urban school systems. On 9 of 12 problems, ranging from student tardiness and absenteeism to student possession of weapons and verbal and physical abuse of teachers, rural teachers gave their schools better marks than did central city instructors. On all these items rural teachers also rated conditions in their schools better than suburban and small city teachers rated theirs, but by smaller margins. In only two cases, student pregnancy and student use of alcohol, did rural teachers report a more serious problem than their counterparts in central cities. Teachers in all areas

Table 6

Full-time teachers' assessments of school problems

Nonmetro teachers report less serious problems, except for student pregnancy, alcohol use, and drug abuse

Responses	Metro			Nonmetro	
	Central city	Suburb	Small city	Small town	Rural
			Score		
Unadjusted responses:					
Student tardiness	2.49	2.83	2.78	2.90	2.98
Student absenteeism	2.33	2.61	2.53	2.56	2.64
Students cutting class	3.07	3.33	3.31	3.67	3.39
Physical conflicts among students	2.75	3.07	2.97	3.02	3.13
Robbery or theft	2.98	3.23	3.15	3.18	3.26
Vandalism of school property	2.76	3.04	2.99	3.06	3.16
Student pregnancy	3.31	3.43	3.34	3.25	3.26
Student use of alcohol	3.17	3.08	3.09	2.96	2.89
Student drug abuse	3.09	3.10	3.09	3.07	3.09
Student possession of weapons	3.45	3.67	3.60	3.67	3.73
Physical abuse of teachers	3.61	3.80	3.77	3.83	3.86
Verbal abuse of teachers	2.80	3.06	3.00	3.08	3.18
Responses adjusted for school characteristics:					
Student tardiness	2.55	2.83	2.78	2.88	2.97
Student absenteeism	2.38	2.60	2.53	2.55	2.65
Students cutting class	3.13	3.34	3.30	3.35	3.38
Physical conflicts among students	2.80	3.06	2.98	3.01	3.09
Robbery or theft	3.02	3.23	3.15	3.17	3.25
Vandalism of school property	2.81	3.25	3.20	3.25	3.14
Student pregnancy	3.37	3.45	3.33	3.22	3.25
Student use of alcohol	3.14	3.10	3.07	2.97	2.95
Student drug abuse	3.09	3.12	3.09	3.07	3.11
Student possession of weapons	3.49	3.67	3.60	3.65	3.71
Physical abuse of teachers	3.64	3.80	3.77	3.82	3.85
Verbal abuse of teachers	2.81	3.07	3.01	3.07	3.18

Notes: Teachers were asked to "indicate the degree to which each of the following matters is a problem in this school" and were given four possible responses to select, 1=serious problem, 2= moderate, 3=minor, and 4=not a problem.

See Data and Methods, p. 15, for a description of the regression procedure used to control for school characteristics. The adjusted scores reported here were obtained by setting teacher characteristics, percentage in school lunch program, percentage Black students, and percentage Hispanic students at their sample averages in calculating the regression equation for each geographic area.

Source: Calculated by the authors using data from the Schools and Staffing Survey.

reported equally serious problems with student drug abuse.

To determine whether the geographic differences in teachers' perceptions were caused by school characteristics rather than location, we adjusted the responses using a regression model that controlled for the effects of teacher demographic characteristics and experience, school level, and the socioeconomic status of the student population (as measured by the proportion of students eligible for free lunches and the race and ethnic composition of the student body). The adjustment had very little effect on the average score in any of the geographic categories, indicating that the rural-urban differences in teacher perceptions are not a direct function of those school characteristics.

In table 7, we report the effect of community type on teacher assessments of various dimensions of school organization. Since the allowed responses ranged from 1=strongly agree to 4=strongly disagree, a smaller score indicates a more favorable assessment. Compared with central city teachers, rural teachers average more contact with the principal regarding instructional practice and see the principal as providing more effective support with respect to discipline. Rural teachers also report more cooperative and collegial relationships with their fellow teachers and more support from parents and are more likely to find necessary resources such as textbooks and supplies available as needed. With this more supportive environment, it is no surprise that rural teachers are more likely to say that they would again choose a teaching profession.

Table 7

Full-time teachers' assessments of school organization

Nonmetro teachers report greater cooperation and coordination among teachers and more support from parents than central city teachers report

Responses	Metro			Nonmetro	
	Central city	Suburb	Small city	Small town	Rural
			Score		
Unadjusted responses:					
Principal talks with me frequently about my instructional practices	2.68	2.69	2.58	2.56	2.50
Principal lets staff know what's expected of them	1.69	1.72	1.66	1.73	1.73
Principal enforces school rules for conduct and backs me up	1.83	1.75	1.69	1.71	1.69
I receive a great deal of support from parents	2.54	2.36	2.43	2.42	2.30
Cooperative effort among staff	1.99	1.89	1.87	1.88	1.86
I make an effort to coordinate content of my courses with other teachers	1.79	1.75	1.77	1.76	1.72
Necessary materials are available as needed by the staff	2.09	1.93	1.93	1.90	1.80
If you could go back to your college days, would you become a teacher again?	2.52	2.43	2.40	2.38	2.39
Responses adjusted for school characteristics:					
Principal talks with me frequently about my instructional practices	2.70	2.67	2.59	2.56	2.49
Principal lets staff know what's expected of them	1.71	1.71	1.66	1.72	1.71
Principal enforces school rules for conduct and backs me up	1.83	1.74	1.69	1.71	1.69
I receive a great deal of support from parents	2.52	2.38	2.44	2.42	2.29
Cooperative effort among staff	1.98	1.77	1.87	1.88	1.85
I make an effort to coordinate content of my courses with other teachers	1.79	1.74	1.77	1.76	1.72
Necessary materials are available as needed by the staff	2.07	1.94	1.93	1.90	1.99
If you could go back to your college days, would you become a teacher again?	2.48	2.40	2.41	2.40	2.41

Notes: Teachers were given four possible responses to select, 1=strongly agree, 2= somewhat agree, 3=somewhat disagree, and 4=strongly disagree, except for the question on choosing to become a teacher again on which they were given six possible responses, 1=certainly would become a teacher, 2=probably would become a teacher, 3=chances about even for and against, 4=probably would not become a teacher, 5=certainly would not become a teacher. See Data and Methods, p. 15, for a description of the regression procedure used to control for school characteristics. The adjusted scores reported here were obtained by setting teacher characteristics, percentage in school lunch program, percentage Black students, and percentage Hispanic students at their sample averages in calculating the regression equation for each geographic area.

Source: Calculated by the authors using data from the Schools and Staffing Survey.

As was the case with the teachers' perceptions of school problems, the adjustment of scores for the effects of school characteristics has little effect on assessments of school organization in any of the geographic areas. The rural-urban differences are not a product of differences in school characteristics by location.

In table 8, we report teachers' assessments of their own influence. The responses to these questions range from 1=none to 6=a great deal, so the higher the score the more influence the average teacher has on the activity. Rural teachers average much more autonomy in the classroom and more influence over school policy. Rural teachers enjoy significantly more control over their classrooms with regard to choice of textbooks, course content, teaching techniques, homework, and discipline. Central city teachers report the lowest influence, and influence steadily increases as the location becomes more rural. Again, adjusting for school characteristics decreases the differences among the geographic areas somewhat but main-

Table 8

Full-time teachers' assessments of their own influence

Rural teachers report more influence over school policies and their own classrooms

Responses	Metro			Nonmetro	
	Central city	Suburb	Small city	Small town	Rural
			Score		
Unadjusted responses:					
At this school, how much influence do you think teachers have over school policy in:					
Establishing curriculum	3.29	3.71	3.59	3.79	3.84
Determining discipline policy	3.47	3.69	3.66	3.73	3.76
At this school, how much control do you feel you have in your classroom over:					
Selecting textbooks and other instructional materials	3.86	4.21	4.10	4.50	4.69
Selecting content, topics, and skills to be taught	4.08	4.34	4.29	4.60	4.77
Selecting teaching techniques	5.16	5.29	5.30	5.36	5.42
Determining the amount of homework to be assigned	5.28	5.33	5.41	5.47	5.54
Disciplining students	4.65	4.85	4.79	4.85	4.93
Responses adjusted for school characteristics:					
At this school, how much influence do you think teachers have over school policy in:					
Establishing curriculum	3.38	3.70	3.58	3.75	3.78
Determining discipline policy	3.56	3.72	3.65	3.69	3.71
At this school, how much control do you feel you have in your classroom over:					
Selecting textbooks and other instructional materials	3.92	4.21	4.10	4.47	4.62
Selecting content, topics, and skills to be taught	4.13	4.33	4.28	4.58	4.70
Selecting teaching techniques	5.22	5.30	5.29	5.34	5.40
Determining the amount of homework to be assigned	5.31	5.35	5.42	5.47	5.52
Disciplining students	4.73	4.87	4.78	4.82	5.47

Notes: Teachers were given six possible responses to select, from 1=none, to 6=a great deal. The adjusted scores were obtained by setting teacher characteristics, percentage in school lunch program, percentage Black students, and percentage Hispanic students at their sample averages in calculating the regression equation for each geographic area. See Data and Methods, p. 15, for definition of county types.

Source: Calculated by the authors using data from the Schools and Staffing Survey.

tains the pattern of increasing influence with increasing ruralness, indicating that differing school characteristics do not account for all of the geographic differences.

Thus, the assessments of teachers suggest that rural schools display many of the critical features identified in the "effective schools" literature (Purkey and Smith). What accounts for this rural advantage? One factor is school size. A significant theme in the recent school reform literature is that larger schools and school districts display diseconomies of scale, which stifle innovation and adaptation in school and classrooms (Walberg and Walberg). Since rural schools are on average smaller than urban schools, do differences in teacher assessments arise from the fact that rural schools are typically smaller than urban schools?

To assess the effect of school size on our findings, we reran the regressions on teacher assessments adding a control for school size. Smaller school size tended to reduce the rural advantage, but on virtually every question a significant rural advantage persisted. Thus, something other than school size and the school characteristics we had initially controlled for accounts for the rural school advantage.

We also explored the question of regional differences in rural effects by reestimating the models including an interaction term for rural southern teachers. This specification divided rural teachers into southern and nonsouthern categories. Southern rural teachers tended to find more problems in the learning environment than did nonsouthern rural teachers. Southern rural teachers tended to be less satisfied with their salaries, resource availability, and class size than their nonsouthern rural counterparts. Not surprisingly, they were also less satisfied with their teaching careers and less likely to report that they would, if given a chance, again choose teaching as a career. On the other hand, they generally reported more input on various aspects of school policy. The rural school advan-

tage is not then as great in the South as elsewhere. Breaking out southern rural teachers makes the contrasts between nonsouthern rural teachers and metro or small town nonmetro teachers stronger. From the teachers' point of view, rural schools outside of the South provide a very attractive learning and teaching environment.

Sources of Rural School Advantages

What factors can account for these rural school advantages? The positive assessments teachers give rural schools may reflect features of rural and small town life rather than schools per se. Schools mirror the communities in which they are situated. If crime and violence are problems in the community, surely they will spill over to the school as well. As one rural educational researcher writes: "Rural communities are still basically homogeneous, stable, and traditional, and rural schools remain essentially an expression of community life" (Dunne, p. 91). Ruralness is probably standing in for positive features of family and community life that we could not control for in our analysis.

While community characteristics that we could not measure may account for some of the rural advantage, they cannot readily explain all of the differences in teacher control, cooperation, and collegiality we identified. The organization and management of schools may also play a part (Sher, Tyack, Nachtigal). Urban and rural schools address the agency problem (that is, how parents and taxpayers induce their agents, the teachers and principals, to serve them effectively) in fundamentally different ways. The approach taken in urban schools is hierarchical and bureaucratic, with decisions regarding textbooks, curricula, teaching methods, and discipline centralized and imposed on all the staff. Rural schools, on the other hand, tend to leave these decisions in the hands of teachers,

Table 9

Full-time high school teachers' time spent in preparation and after school activities, 1987-88

Rural teachers spend more after school hours in activities involving students

	Metro			Nonmetro	
Task	Central city	Suburb	Small city	Small town	Rural
			Hours		
Home preparation, including grading	7.6	7.6	7.6	7.4	7.2
In-school preparation periods	6.1	6.5	6.2	6.1	5.9
After school activities with students	4.0	4.2	4.6	5.0	5.5

Note: See Data and Methods, p. 15, for definition of county types.
Source: Calculated by authors using data from the Schools and Staffing Survey.

with teacher performance monitored and motivated by closer ties between the school and the community. Teachers in rural school districts, for instance, are more likely to live in the community served by their school. A recent survey by the National Education Association found that 54.6 percent of teachers in districts with fewer than 3,000 students lived in the attendance area of the school compared with just 16.9 percent of teachers in districts with 25,000 or more students. Thus ineffective teachers cannot as readily escape censure at the end of the day, while effective teachers may find their superior performance continually reinforced. Children of rural school teachers are also more likely to attend the school at which their parents teach. Such close links between the teachers, the principal, the school board, and the community may lessen problems of performance monitoring and motivation that beset all organizations.

This contrast between rural and urban environments is starkly apparent in the way teachers allocate their time. Rural high school teachers spend approximately the same time in class preparation and student evaluation as urban and suburban instructors — indeed, more, if these figures were adjusted for the smaller rural student/teacher ratio. However, there is a striking contrast in the allocation of hours outside school to activities involving students (table 9). Rural instructors average 90 minutes more per week in such activities as coaching, drama, debate, and club sponsorship.

Thus, the relationship between the school and the community is a two-way street, with the school both contributing to and benefiting from the greater sense of community and shared purpose found in rural and small town districts. The following characterization of the nation's Catholic high schools might well be applied to rural school systems:

"[T]he academic structure of Catholic high schools is embedded within a larger communal organization...[A] set of distinctive structural components...enable the community. Chief among these is an extended scope of the role of the teacher. Teachers are not just subject-matter specialists whose job definition is delimited by the classroom walls. Rather, they are mature persons whom students encounter in the hallways, playing fields, in the school neighborhood, and sometimes even in their homes. In the numerous personal interactions that occur among adults and students outside of classrooms, many opportunities are afforded for expressions of individual concern and interest." (Bryk and Lee, p. 20)

Just as the high quality of social interactions between adults and students has been found to contribute to the effectiveness of parochial schools, so it is reasonable to conclude that students in rural school systems also benefit

Data and Methods

The 1987-88 Schools and Staffing Survey (SASS) is a comprehensive survey of approximately 9,300 public and 3,500 private school administrators and about 56,000 public and 11,500 private school teachers at these same schools. SASS contains four survey instruments: a school survey, a district-level survey focusing on teacher demand and shortages, an administrator survey, and a teacher survey. Response rates were quite high for public schools and public school teachers: 92 and 86 percent, respectively (for details on the 1987-88 SASS survey and methodology, see Office of Educational Research and Improvement, U.S. Department of Education, 1992).

The county type classification we use is a modified version of ERS' rural-urban continuum codes (popularly referred to as Beale codes). We collapsed the continuum categories into three metro area types (Central City, Suburb, Small City) and two nonmetro area types (Small Town, Rural).

The continuum categories in each of our types are

Type	Continuum code and definition
Metro:	
Central city	0. Central counties of metro areas of 1 million population or more
Suburb	1. Fringe counties of metro areas of 1 million population or more
Small city	2. Counties in metro areas of 250,000 to 1 million population
	3. Counties in metro areas of less than 250,000 population
Nonmetro:	
Small town	4. Urban population of 20,000 or more, adjacent to a metro area,
	5. Urban population of 20,000 or more, not adjacent to metro area,
	6. Urban population of less than 20,000, adjacent to a metro area,
	8. Completely rural, adjacent to a metro area
Rural	7. Urban population of less than 20,000, not adjacent to a metro area
	9. Completely rural, not adjacent to a metro area.

We needed to group the continuum codes into fewer categories because the SASS sample could not provide highly reliable results for all 10 groups. Although the code 8 counties are completely rural (that is, contain fewer than 2,500 urban residents), we grouped them with the more urban nonmetro counties because their proximity to metro areas appeared to provide a more urban environment. The entire grouping is named "small town" for ease of reporting.

We grouped the somewhat urban, nonadjacent nonmetro counties, code 7, with the rural, nonadjacent nonmetro counties, code 9, because their lack of proximity to metro areas appeared to provide a more rural environment. The entire grouping is named "rural" for ease of reporting.

from the more extensive contacts with their teachers that rural communities foster.

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